AN INQUIRY INTO THE AUTHENTICITY OF A HOARD OF $20 UNITED STATES ASSAY OFFICE GOLD PIECES

Since I have been asked to make a statement of a technical numismatic nature I believe that a brief summary of my background is advisable. I have continuously collected and studied coins and paper money as a hobby for 45 years, primarily in the American field. I have steadily undertaken research and writing in the field beginning over 20 years ago and have assisted others in similar activity. In 1958 I was instrumental in the organization of a non-profit numismatic education society bearing my name to aid in numismatic research, writing, and exhibition on a broader scale and I am representing this Society in making this statement. In the course of my work for this Society and prior thereto I have studied counterfeits, reproductions, imitations, forgeries, alterations and fantasies. Many of my studies in this field have been published, such as:

The Secret of the Good Samaritan Shilling
The Fantastic 1804 Dollar
Counterfeit Continental Currency Goes to War
A recently discovered Coin Solves a Vermont Numismatic Enigma
Diagnosing the Zerbe 1804 and 1805 Dollars
An Oak Tree Shilling Forgery Appears
A Snake Breeds a St.Patrick Farthing
Auctori Plebis - But Without Authority
An Elephant Token Never Forgets - Forgery

Many coins have been submitted to the Eric P. Newman Numismatic Education Society for an opinion as to their genuineness and such opinions have been given by me on its behalf. I have often lectured on false coins. I serve as a member of the Council of the American Numismatic Society and have been a member of the A.N.A. for over 31 years.

At the 1964 American Numismatic Association Convention at Cleveland I was asked by Dr.James O. Sloss to participate in the determination as to whether certain $20 U.S.Assay Office Gold

pieces were genuine and was shown one of the questioned pieces at that time. I was told that George J. Fuld, Abe Kosoff, and John Pittman would also be asked to be members of the study group. I explained that the education society would be glad to participate if the coins were made available for study and subsequently much work was done on the subject. While I have discussed certain facts and theories with members of the study group and with a few people from whom I sought further data, neither I nor the education society have heretofore expressed any specific opinion or revealed any opinion of other members of the study group. Due to illness, a long delay in the study resulted and the group has not formulated a joint opinion. I am satisfied that at this time there is no objection by any member of the study group to a free expression of findings and opinions by any of its members. While I have received requests for an opinion on the matter on many prior occasions, I felt that it was untimely and ill-advised to give an opinion for two reasons: first, I felt that everyone in the study group was entitled to sufficient time to exhaust all opportunities to learn additional facts, and second, I felt that more than a reasonable time should elapse after the study group was known to be at work in case any voluntary disclosures were to be made. I am aware that there has heretofore been considerable comment about $20 USAOG pieces and related matters and therefore feel that it is fortunate an impartial hearing on the matter has been arranged. Because the inquiry primarily involves coins themselves I am avoiding the use of names of individuals to the extent that a full disclosure of facts will not be adversely affected. There are many individuals whose cooperation has been exemplary and whose desire to seek the truth was in the highest tradition of numismatic scholarship.

The importance of a correct determination of the question cannot be underestimated, since it relates not only to the Garland coin under review and to other numismatic items in the hands of collectors and dealers but to the future of numismatics. Any opinion expressed must be based upon certainty, and for that reason facts relating to inconclusive findings or speculation as to facts will be omitted unless they become more relevant in the course of other developments or are reasonably requested.

Our findings and conclusions are as follows:

In the July, 1963 NUMISMATIST (p.997) there is an advertisement seeking among other things to buy, a $20 U.S.Assay Office piece in "Gem Proof Mirror Surface Condition" and the ad indicated that theretofore one had been seen by the advertiser. A letter was published in answer thereto in the August, 1963 NUMISMATIST (p.1090) offering information concerning coins of that type dated 1853 with a fineness of 900. The letter stated that seven gem proofs "were obtained from the direct descendant of an associate of August Humbert " and that five were for sale in the Spring of 1958. The Garland specimen can be traced back to one such sale. The weights of the seven pieces were given as ranging from 514.5 to 518.25 grains. The weight and the alloy were said to be written on old linen handkerchiefs in which the coins were wrapped but which were not available. The letter states that since 1958 other "semi-proof or first-strike specimens" were obtained from "living relatives and friends of the gentleman with whom we first did business." The number of the semi-proof or first strike coins was not stated, nor was it stated whether the "gentleman" who was the original source of the coins was then dead or alive. The identification of the source is not further clarified and that source will be referred to in this statement as the "Humbert Associate Source."

The proofs were stated in that letter to be from highly polished dies and planchets and an opinion was given that the gem proofs apparently were patterns made to test copper alloy combinations. All proofs were said to be from the same pair of dies and it was pointed out that the reverse die is distinguished by a projection on the right upper of N in UNITED. The letter mentioned that the Seavey (1864), Bell (1944) and Farouk (1954) sales each contained a proof $20 USAOG 900 fine and that the Red Book illustrated a proof with a lump on the reverse between TE of UNITED.

There was a proof-like 1853 USAOG $20 sold as Lot 3338 at the ANA 1964 Convention Sale which was said to have been bought as a true proof and was given an estimated value of $4500. The cataloguer said that he had previously bought another specimen as a proof, which he had sold and which was later offered at $6500. Both the auctioned coin and the cataloguer's former coin were said to have come to light in a discovery. The cataloguer stated that neither were proofs. That cataloguer's former coin is the coin now owned by Paul Garland.

Other recent public offerings of choice $20 USAOG pieces which have come to my attention are a superb gem proof offered for $4500 in the October, 1964 NUMISMATIC SCRAPBOOK MAGAZINE (p.2819), a brilliant uncirculated specimen as Lot 1702 in the April 30,1965 Paramount Sale, and a gem proof offered for $1200, on page 1122 of the May, 1966 NUMISMATIC SCRAPBOOK MAGAZINE .

In the Blue Ridge Coin News for November, 1964 Paul Garland informed its readers that a coin for which he had paid $3300 was false. He was referring to his $20 1853 USAOG because he specifically named the members of the study group which was then at work on the matter.

In the 1966 Whitman Red Book the listing of the $20 1853 USAOG 900 fine (p.225) was accompanied by the comment, "Beware of Spurious specimens in Proof condition." This statement was inserted in the 1966 Red Book on the recommendation of a panel of 13 named advisors (p.213) on U.S.Territorial Gold, all of whom were informed of the proposed statement before its insertion and no objection to it was then raised. The statement, however, was removed from the 1967 edition of the Red Book.

Of the type of coin under study I have had the opportunity to examine four glittering superb pieces from the Humbert Associate Source (#5, 7, 14 and 16), including the Garland piece, one normally appearing proof (#12), two brilliant uncirculated pieces (#6 and 15), a large group of circulated pieces ranging from very good to about uncirculated condition, and seven lead items containing some of the same designs, (six being from the Humbert Associate Source). There apparently is in existence a piece in silver which is held along with two additional glittering pieces in gold, all three from the Humbert Associate Source.

On November 17, 1964 some USAOG examples were turned over to the United States Secret Service for authentication purposes. The Secret Service sought the legal opinion of the General Counsel of the Treasury Department as to whether the Secret Service had authority to investigate the matter. A ruling was received that the United States Assay Office coins were not obligations of the United States government and the Secret Service therefore declined to investigate the matter.

Enlarged photographs of 25 coins which were extensively studied are on hand and these will be referred to by number and their characteristics described.

Coins #1 and 10 are the variety with 884 THOUS above the eagle on the obverse. In making the dies for 900 fine pieces the 900 was

punched over the 884 in the die and evidence of such overpunching is readily noticed on every 900 fine gold coin.

Coins #1, 2, 3, 4, 8, 9, 10, 11, 12, 13 and 19 were owned by museums or private collections long prior to 1958. The date of acquisition by the owners of #17 and 18 is not available. The ownership of #5, 6, 7, 14, 15, 16, 20, 21, 22, 23, 24 and 25 came about during or after 1958.

Coins # 1 through 19 are gold and coins #20 through 25 are lead. The lead pieces will be separately commented upon, primarily because they have substantially different obverse designs.

Coins #5, 7, 14 and 16 are glittering pieces, far shinier than normal proofs of the period and not as mirror-like. Coins which have been cleaned or polished subsequent to striking are sometimes found with similar patina, but original strikings of United States coins are not. This makes it appear that an attempt has been made to produce an artificial proof surface rather than that the coins are normal proofs.

Coins #15 and 16 are double struck, the former on both sides and the latter on the reverse, making visibility of some details difficult.

Coins #1, 2, 3, 4, 6, 8, 9, 10, 11, 12, 13, 14, 15, 17, 18 and 19 have a rice shaped raised lump under the right arm of the T of UNITED on the reverse while #5, 7 and 16 do not. This lump seems to have been caused by an accidental flaking or disintegration from crystallization in a small part of the field of the reverse die and was not produced by normal die cutting. It probably occurred during the abrupt temperature drop in hardening the steel die by immersion in liquid when heated.

Coins #5, 6, 7, 14 and 16 have an identical raised diagonal line under the right corner of the right base of the second A in AMERICA on the obverse. This was caused by a die scratch and this therefore shows that #6 which is not of the glittering type has the same obverse die as the glittering pieces.

Coins #5, 6, 7, 14, 15 and 16 have a straight dent rising to the right across the upper part of the I in UNITED on the obverse. This dent is identical on all those coins and therefore came from the die and not from handling the coins. The dent is not found on other coins. Since #5, 7, 14 and 16 are glittering pieces from the Humbert Associate Source it is clear that the same obverse die was used for the #6 and therefore it is among the "first strike" or "semi proof" pieces mentioned as being from the same source.

Coins #5, 7 and 16 have a raised horizontal projection from the right side of the upright of N in UNITED on the reverse but no other pieces do. Since #6 and 14 have the same obverse die as these coins, this shows either a different reverse die was used or there was a change in the condition of the reverse die. The horizontal projection being raised on coins#5, 7 and 16 was a depression in the die and therefore coins #6 and #14 would have to be struck before #5, 7 and 16 if all of them were coined from the same pair of dies.

Coins #6, 9, 13, 14, 15, 17 and 18 have a heavy reverse die break from the First A and S in ASSAY to L of GOLD to the second C of FRANCISCO and toward the 8 in the date. In some pieces the break appears on the top of the first A in ASSAY. However, coins #5, 7 and 16 show slight evidence of the identical reverse die break because they have a raised spur projecting angularly downward and to the right from the right end of the right base of the first A in ASSAY. Therefore the reverses of coins #5, 6, 7, 9, 13, 14, 15, 16, 17 and 18 would logically have to be from the same die as identical die breaks cannot occur on different dies. This reverse die observation coupled with the above obverse die observations leads to the conclusion that all of the glittering proofs (#5, 7, 14 and 16) were struck from the same pair of dies and that #6 was likewise struck with those identical dies.

Coins #5, 6, 7, 14, 15 and 16 have 170 reeds or ridges on their edge whereas all other coins examined have 162 reeds. This means that a different collar was used in striking the 170 reed pieces than was used for the others because in 1853, as it is at present, the reed impression was produced by the lateral expansion of the planchet into the collar when the dies struck the planchet. The reeds on the 170 reed pieces have sharply defined ridges, and any two of those pieces placed side by side interlock with and roll on one another just as gear teeth do.

Coin #6 shows under magnification that the right and bottom portions of the field on the obverse are completely filled with a large number of sweeping curved lines. These lines are very close together and are separated by identical distances. These lines are not arcs formed from the same center point but are a part of a perfectly uniform spiral or helix with the center point of the coin as a center. This design is so perfect that it had to be produced on a lathe and could not be cut by a skilled hand in 1853 or now. A powerized lathe turning circular material at a constant speed and equipped with a tool mounted on an automatic cross feed can cut such a design. The tool moves vertically to the axis of rotation and its automatic forward progress produces a helical tool mark in smoothing off the end of the material. This helical tool mark is not found on any other coin examined and I am unaware of such a marking on any other coin of any type. This marking could appear on a coin either from the helix being on the planchet before striking or on the die. Since the identical obverse die used to strike #6 was also used at least on #5, 7, 14 and 16, such a helical pattern should also be seen on those other coins if it were in the die. No such design can be seen on those other coins and thus the helical tool marks were on coin #6 planchet before striking. This proves that the planchet was not made in the ordinary manner by drawing a

sheet of metal to proper thickness and punching out planchets as was the normal process in 1853 and is still in use today. The planchet therefore was produced by a lathe in a most abnormal manner. In 1853 the automatic cross cut device as distinguished from the horizontal automatic feel was not available on lathes in America.

Only coins #2, 3, 4, 5, 6 and 7 were tested by X ray diffraction and the photographic prints have been interpreted to show that the planchets for coins #5 and 7 were cast rather than drawn while the others were not cast. The photographic results show a much greater dispersion of the rays passing through #5 and 7. The fact that planchets for #5 and 7 are not rolled and drawn and differ from #6 which was machined adds further to the fact that abnormal planchet production occurred in these instances.

In 1853 multiple dies could be made from a common hub and they would be difficult to distinguish unless there was some defect such as a scratch, surface imperfection or die break which occurred after the die was sunk. Any such defect would appear on each coin struck from the die bearing the defect unless the defect occurred in the course of striking and then all coins thereafter struck from the die would bear the defect and those struck before would not. A die break may be progressive and would only increase in size as coins were struck. Such defects appear raised on the coin and are depressions on the die surface. They cannot be cut away, removed from the die or filled in.

When dents appear on a coin this is the result of contact with other coins or bumps from use. Identical dents therefore cannot appear on several different coins. Gold coins in particular are soft and easily subject to denting. There are many dents found on USAOG coins. Yet coins #5, 6, 7, 14, 15 and 16 have a large group of identical dents particularly on the frame line surrounding the text on the reverse. Since such reverse dents cannot have arisen

separately on each coin, they must therefore have been produced from a reverse die with a surface shape to form such dents. These dents must be raised portions within the depressed frame line of the die to produce depressions in the coins. The largest and most conspicuous of these dents on the frame line of the reverse of coins #5, 6, 7, 14, 15 and 16 begins under the right tip of the base of F in CALIFORNIA and slopes down to the right almost as far as a point below the right end of the top horizontal member of that F. This dent appears on no other coins examined. Since #5, 7 and 16 do not have the fully developed die break through the letters and #6, 14 and 15 do have the extended die break through the letters there are Humbert Associate Source coins with and without the die break, but all bearing the identical frame line dent above described. This dent was therefore in the die before the die break beginning from the first A of ASSAY had fully developed. As heretofore pointed out coins #9, 13, 17 and 18 have the same die break fully developed but do not have the large dent on the frame line. This presents a contradictory situation. It is impossible to have some coins with the identical reverse die break definitely have the large dent and some definitely not have the large dent, when the dent always was a raised part of the identical die from which all coins with the well developed die break would have to be struck.

This same contradiction applies to the raised horizontal line on the right side of N of UNITED on the reverse of coins #5, 7 and 14. This would have to be an indentation in the die before the die break fully developed and cannot disappear from the coins struck after the die break became further extended as it does on coins #6, 15 and 16.

How, in one reverse die could a raised portion producing the frame line dent and a depressed portion producing the raised hori-

zontal line on the N of UNITED both appear on the coins for a while and then disappear. It could not.

The rice shaped lump under the T of UNITED also adds to this conclusion. If the lump was not a depression in the die when the die break at the first A in ASSAY first appeared how could it appear after that die break was extended and appear in exactly the same shape, size, and position as it is found on coins like the 884 THOUS and many 900 THOUS pieces which show no die break whatsoever from the first A of ASSAY. It could not.

The foregoing is conclusive evidence that the coins from the Humbert Associate Source were not struck from original dies made to strike the 1853 USAOG coinage. If the dies were not original 1853 dies they must be false dies. If they are false dies and some contained a die break identical to the die break found on many pedigreed coins such as #9 and 13 and on coins illustrated in many old sale catalogues, then the false dies must have been produced from a coin with a fully developed die break on the reverse.

Lead pieces #20 through 25 come from the Humbert Associate Source. Only #20 has an obverse and reverse similar to the other pieces from the same source, but the fineness number has been scraped out of the obverse. Coins #21, 22 and 23 have the same reverse but a completely different obverse bearing the legend A HUMBERT U. S. ASSAYER. Coins #24 and #25 have the same obverse as the gold pieces except that the figure 50 is in place of the denomination TWENTY. The obverse of coins #20, 24 and 25 has the identical diagonal dent in the I of UNITED as do all Humbert Associate Source coins. Coins #21, 22, 23 and 24 have a reverse similar to the normal reverse of the coins under consideration. These lead reverses all have the lump under the T of UNITED. They all have the identical dent in the frame line under the F of CALIFORNIA just as the other Humbert Associate Source coins do. They all have a die break through

the letters just as #6, 14 and 15 of the same source do. This therefore is a strange set of trial pieces since the reverse die had already been used for production and the die had been extensively cracked before the lead trials were made. Comparing this to another lead trial of a $20 USAOG reverse which has been in a museum for about fifty years it is noted that the latter does not have the diagonal dent on the I in UNITED on the obverse nor the dent in the frame line nor the die break at the first A of ASSAY as found on the Humbert Associate Source lead trials. Thus the lead pieces also fit in with the conclusion that false dies were used for the Humbert Associate Source examples.

The question arises as to how such devilment can be accomplished. A highly skilled artisan using sophisticated technical equipment can produce a steel or hard metal die or hub from a coin. First a wax, latex or plastic mold can be made from each side of the coin. The mold can then be dipped in a ceramic slurry, withdrawn for drying, and redipped until a ceramic deposit has been built up to adequate thickness. It can then be burned in a furnace and the wax, latex or plastic mold volatilizes leaving a hard ceramic positive identical to one side of the coin. Molten steel or other hard metal can then be centrifically cast into the ceramic positive producing a durable die. There are many possible variations in this technique as it is fundamentally nothing more than precision casting of a die from a small object, a process which in the last ten years has been greatly improved. Such casting could not be done well until modern times because electrotyping, sand casting and dental stone casting, even with centrifugal procedures, were not perfect enough or strong enough to permit the creation of a superbly accurate hard metal die. The shrinkage of metal in the casting produces a slight size differential which is unnoticeable unless measured by precision instrumentation. If the edge of the coin is reeded a separate collar

die must also be produced and an automatic gear hobbing or broaching machine can readily cut a shape needed to form it. After the dies are hardened coins can then be struck using the two dies and a collar in a press. The product can be struck in any desired metal, in any desired thickness and in various obverse and reverse die combinations. Reproductions as well as fantasies can be readily coined. To make glittering coins from these dies the field can be polished easily because the design is recessed in the die and then polished or unpolished planchets may be used depending on the sheen required. Single or double striking and adjustments in pressure will also vary the coinage.

If alterations in the date, letters, etc. are sought a hardened die can be pressed into soft steel to produce a steel hub. In this hub the lettering, die breaks and dents project and therefore can be smoothed off with a tiny mechanical polisher or in a jeweler's lathe so that a flat field can result where a raised portion once was. The hub can then be hardened, transferred in its changed form to a soft steel die. The new die can then be hardened and used in its then state or the die before hardening may have different letters or a different denomination punched into it so that it can create unknown coins.

All of the foregoing requires specialized skill and tedious work. Let us apply these procedures to the production of the dies used in the $20 USAOG pieces from the Humbert Associate Source. The extensive reverse die break and the lump under T in UNITED which were on the original genuine $20 coin used to make the mold for the false dies and appeared on the first of the reproductions. Then a steel hub was made from the reverse die and the die break and lump polished off to a great extent, except for the trace of the die break next to the first A in ASSAY. The obverse and reverse dents on the original coin were transferred to the false dies and

were not noticed but were too difficult to remove even if they had been. Then reproductions were struck using the second false reverse die.

As to the 50 D appearing on the lead pieces a steel obverse hub was made from the steel obverse die and TWENTY (raised off the field in this state) was polished off; a new die made by transfer; and the figure 50 punched into the new die to change the denomination. The D for DOLLARS was left high and dry in the same position it was when the die was a false $20 die. Then the lead impressions, #24 and 25 were struck with this variant, a crude fantasy reverse die being cut for #25 reading MOFFAT & CO.

The maker of the reproductions apparently had trouble. He seemed not to have metal drawing equipment available and determined to make his planchets by other means.He seems to have tried casting the planchets one at a time and to have tried cutting the planchets on a modern lathe with an automatic cross cut mechanism. He might have polished the planchets on a lathe one at a time when he wanted full glitter. In the course of minting the reproductions the maker accidentally scratched his obverse die slightly under the last A of AMERICA and nicked the reverse die slightly next to the N in UNITED leaving these tell-tale marks. Because the coins with a fully developed die break came first (#6, 14 and 15) and those without most of that die break (#5, 7 and 16) followed, the reversed order of the appearance of the horizontal scratch on the N in UNITED on the reverse is clarified.

But in spite of all the care and precision of the maker he must have failed to count the reeds on the collar of the original coin and cut a collar in a broaching machine with 170 instead of 162 reeds in it. Beginning now it appears that a reed counting practice must be undertaken as the surest method to diagnose a $20 USAOG

reproduction. The dent under the F of CALIFORNIA and the remaining die break evidence on the productions might be artificially obscured as can the raised defect under the last A of AMERICA. The number of reeds cannot be changed. However, new strikings can be prepared by using the false dies with a remade collar if they still exist. Now that the reproductions are identified there are many other means of distinguishing them from originals, but comparisons with genuine pieces or highly enlarged photographs are not practical for most numismatists. The quantity of Humbert Associate Source coins is not known and caution is required for the future.

For the reasons set out above we conclude that the Garland coin, being #5, and being from the Humbert Associate Source is not genuine and is made with false dies and hubs cast from a genuine coin and modified slightly before use in mintage.

Somewhere there is a beautiful genuine $20 U.S.Assay piece 900 fine which has the obverse dents and the reverse dents identical to those found on the coins from the Humbert Associate Source. It has the extended die break on the reverse. It has the lump under the T of UNITED. It is the piece from which the molds and dies were made to strike the Humbert Associate Source coins.

The Humbert Associate Source has not been alone in the manufacture of reproductions and fantasies as such activities have been and are now going on. Dangerous modern forgeries and fantasies will undermine numismatic enthusiasm and collapse numismatic values of scarce and rare pieces if a thorough investigation into the situation is not undertaken and a solution found. The current laws and the enforcement of law are not adequate to cope with the menace, as the public's primary interest in this field is and should be in the suppression of the counterfeiting of circulating money. Every lawful pressure should be used by numismatists and their organizations to require that all coins, dies, hubs, punches, bars,

trials, molds and stampings emanating from the Humbert Associate Source be turned in to the A.N.A., the A.N.S., or other permanent impartial organizations for permanent mutilation after settlement by sellers of any proper refunds to purchasers. It would be injurious to numismatics to have such reproductions available for redistribution or the tools available for other reproductions to be made. Quantities of high quality reproductions of Byzantine, Roman, Spanish Colonial and United States gold and other coins of recent origin must be drastically dealt with as well. Numismatics is at the crossroads, and the tragedy which can result if the manufacture, distribution and retention of superb reproductions and fantasies are not crushed is awesome.

The cooperation of James O. Sloss, George J. Fuld, Abe Kosoff and John Pittman as members of the study group was essential to make this study possible. In addition special thanks are due to L. Harold Spradley, Director of Lunar Photography for the United States Air Force and George J. Fuld for superb photographic accomplishments.

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By Eric P. Newman

August, 1966